

**DRAFT**  
ANADROMOUS FISH EVALUATION PROGRAM  
Fish Facility Design Review Work Group  
Minutes  
January 22 and 23, 2003

ATTENDEES:

<u>Name</u>	<u>Organization</u>
Noah Adams	United States Geological Survey (USGS), Biological Research Division
Martin Ahmann	U.S. Army Corps of Engineers (Corps)
John Bailey	Corps – Little Goose Lock and Dam (Little Goose)
Scott Bettin	Bonneville Power Association (BPA)
Jim Cain	Corps
Kevin Crum	Corps
Rick Emmert	Corps
Gary Fredricks	National Marine Fisheries Service (NMFS)
Carolyn Foote	Corps
Paul Gregory	Corps
Mike Halter	Corps
Kenneth Ham	Pacific Northwest National Laboratories (PNNL) (formerly known as Battelle Pacific Northwest Laboratory)
Paul Heisey	Normandeau Associates
Bill Hevlin	NMFS
Fred Higginbotham	Corps
Dave Hurson	Corps
Gary Johnson	PNNL
Rebecca Kalamasz	Corps
Dan Katz	Corps
Mark Lindgren	Corps
Margie McGill	Corps
George Melanson	Corps – Little Goose
Sean Milligan	Corps
Russell Moursund	PNNL
Chris Pinney	Corps
Cary Rahn	Corps
Steve Rainey	NMFS
Lynn Reese	Corps
Dennis Rondorf	USGS
Ann Setter	Oregon Department of Fish and Wildlife (ODFW)
Marvin Shutters	Corps
Mark Smith	Corps
Ben Tice	Corps
Ron White	Corps
Rod Woodin	Washington Department of Fish and Wildlife (WDFW)
Tonia Elsey	Corps

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The Fish Facility Design Review Work Group (FFDRWG) meeting was held in the Castle Room on January 22 and 23, 2003, at the U.S. Army Corps of Engineers (Corps), Walla Walla District (District), 201 North Third Avenue, Walla Walla, Washington. Marvin Shuttles organized the meeting, and Tonia Elsey served as note taker. The meeting was audio taped in order to facilitate completion of the minutes.

1. Removable Spillway Weir (RSW). Rebecca Kalamasz distributed the agenda (see handout 1 in the handout section) for the RSW development. Rebecca stated that there are several facets to the RSW (could not understand). There is the upcoming removal of the associated structures at Lower Granite Lock and Dam (Lower Granite), the biological evaluation study for 2003, and the discussion as it relates to the Ice Harbor Lock and Dam (Ice Harbor) (could not understand). Rebecca asked everyone to look at the agenda and decide if anything needed to be added.

Kevin Crum stated that the tests scheduled at Lower Granite and Ice Harbor need to be added as related elements for RSW implementation. Kevin stated that they also needed to discuss some implementations of the Behavioral Guidance System (BGS) potentially following RSW development at Ice Harbor. He distributed a table depicting the RSW/BGS schedules (see handout 2 in the handout section). He stated that they needed to discuss how it all fits into the scope of things. He stated his team sees potential belated work on the BGS at Lower Granite that may offer some insight on BGS development at Ice Harbor and possibly even Lower Monumental Lock and Dam (Lower Monumental).

Scott Bettin asked if the test (which one) was going to be postponed until next year. Kevin stated that was the first thing on the agenda to discuss. Kevin distributed facilitator notes (submitted by Bill Hevlin) from the January 16, 2003, Columbia River Regional Forum System Configuration Team (SCT) meeting (see handout 3 in the handout section). Kevin stated that the core of the issue is: taking out the surface bypass collector (SBC) and the simulated walls insert (SWI) requires a lot of diving and powerhouse units to be off for extended periods of time. There may be more flow than the powerhouse could handle during some periods of that off time that would cause poor spill. February is not the best time financially to risk having poor spill. Bonneville Power Association (BPA) is very cued into the lost revenue portion of the removal. Additionally, there is the fear that if the contract work is done and there is a low flow year that the tests scheduled for next spring at Lower Granite may not result in solid enough data to use for making decisions. So, the tests could be another potential revenue loss.

Scott Bettin asked if the cost for SBC removal was still approximately \$1.9 million. Kevin stated that would be for SBC removal only. There would be an additional estimate for the spring test. There are higher costs associated with the spring spill.

Kevin Crum stated that the SBC removal contract status shows there were bid openings the week of January 14, and award notice to proceed (NTP) is expected by the end of January. Kevin stated that he had just learned that bid award would be as

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soon as tomorrow. Advance American is the low bid at under \$1 million. This contractor would be able to complete the work in the work window available. The contractor is expecting to begin work in early February. It is projected to be a 4 to 6 week job working 20 hours a day, 7 days a week. Construction could be complete by mid March (contract cutoff date is April 1) to the end of March. That leaves an approximate 2-week window to install all of the fish monitoring equipment. Dave Hurson asked what type of fish monitoring equipment was going to be installed. Kevin stated that it was mostly radio telemetry gear and antennas. There was discussion on the necessary work needed to install the fish monitoring equipment, and other construction that might overlap the installation and possibly the testing.

Kevin stated that the biological evaluation is one of the important issues for discussion today. The BPA wants to determine the kind of tests the Corps may conduct, so they can determine what kind of impact the tests will have on revenue. Kevin stated that one goal for the morning's session is to cover the two objectives that are available for this year's test, and formulate some other test scenarios that can be agreed upon. One question to consider would be, what happens if the SBC is not removed?

Rebecca Kalamasz stated that there are two major objectives. The first objective is the need for an extremely good idea of what the study design is, given the various flow conditions. The second objective is the need for a very good understanding of what triggers or defines those flow conditions. The goal for this morning's meeting is to define those two objectives. She stated that the Corps team has determined that the major biological objectives for the 2003 stand-alone RSW test at Lower Granite are survival and performance.

Bill Hevlin summarized the discussions at the last SCT meeting (see handout 3 in the handout section). He stated that SCT assigned the task of designing the RSW test to FFDRWG. There was discussion on potential study designs. Steve Rainey stated it was important to define the low-flow testing scenario. Rod Woodin stated that he was uncomfortable advocating going forward with evaluations that are corrupting the intent of the Biological Opinion (Bi-Op), as far as system survival and (could not hear) in the face of the implementation plans in survival objectives. He stated his initial reaction if the Bi-Op flow targets are not met is to implement spill, then evaluation should not be attempted. Discussion continued.

Kevin Crum laid out the time line for the upcoming construction and testing at Lower Granite and Ice Harbor (see handout 2 in the handout section). There was discussion on the proposed construction and testing at Lower Granite and Ice Harbor. Gary Johnson asked if the BGS could still be attached to the dam in its current length and depth if the SBC is removed. Kevin stated that it could be attached, but there would be a gap at the base of the dam. There was discussion on the pros and cons of the SBC at Lower Granite.

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Rod Woodin stated that the first step, relative to the BGS, should be to look at the hydraulics of the basic flow patterns in the forebay at Ice Harbor compared to Lower Granite. They need to see if the basic flow patterns are even remotely similar by using the radio tracking fish data that is already available. Rod stated he was concerned that a BGS test at Lower Granite would not tell anything about how it would work at Ice Harbor. Lynn Reese stated one objective for this year's testing was to collect some baseline data on the fish approach at Ice Harbor. There was discussion on the BGS.

Bill Hevlin stated that discussion on the BGS was important, but he felt they needed to spend time discussing the survival tests. He stated that survival testing at Lower Granite was the most important. Mark Lindgren stated that survival data should be easier to obtain than performance data. There was discussion on the survival and performance testing at Lower Granite. Noah Adams stated that survival data at Lower Granite could be obtained this year without removing the SBC/SWI. Discussion continued.

Rebecca Kalamasz stated that they needed to discuss what was meant by low, medium, and high flows. She asked what might be constituted logistically using RSW spill, Bi-Op spill, and powerhouse operation to obtain a fairly stable tailrace environment. There was discussion on the different spills that could be logistically used for testing. Rebecca stated that it had been agreed that survival means nothing if it is not compared to Bi-Op spill. The very minimum information needed in a survival test is a Bi-Op spill condition. Discussion continued on the different spill conditions that needed to be used to conduct a survival test. Rebecca stated the objective is to identify if there is a serious survival problem by implementing an RSW at Ice Harbor. She stated it is to compare the survival rate between Bi-Op versus RSW. There was discussion on the survival testing with Bi-Op versus RSW.

Dave Hurson stated that one thing that needs to be figured out is what type of flow year is necessary to conduct a performance test, and what kind of a flow year can a spill test without a performance test be conducted. There was discussion on flow types and how low, low flow can be to still test survival.

Rod Woodin stated that a comparative survival study could be conducted at any flow. He would not recommend conducting a full system performance study at any flow below the Bi-Op. He also stated that he was not comfortable conducting a survival study below the Bi-Op. There was discussion on comparative survival studies.

Dave Hurson stated the team should speak to Bill Muir, look at the multiple years of spillway comparison tests, and ask him if there is anything that shows mortality going to the spillway is different from one year to the next. This information could help make the decision of whether testing is required at (could not understand) bay. Steve Rainey stated those tests ignored discharge per bay, location, and many other important things. Dave Hurson stated that those tests produced almost no mortality at Lower Granite. Gary Fredricks stated that the test scenarios being compared are going to have to make sense. As these tests are being shoehorned into an adverse year, the differences

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between what you see through one route versus the RSW, versus spill, could change relatively, which, in turn, could bias the understanding of the test. Discussion continued on the comparative survival studies.

Mark Lindgren stated that what he is hearing is, if we could get to 70,000 of flow for a 3 week period, the testing could alternate between the RSW operation and Bi-Op spill (6 days of Bi-Op spill). Even in a low-flow year it would be easier to sacrifice the 70,000 to obtain the survival information. Discussion continued on the comparative survival studies.

Rebecca Kalamasz asked Bill Hevlin if he was saying they should start the comparative survival studies at 50,000 flow and continue on if the river got to 70,000, but if the river never got to 70,000 then the test would be conducted with 50,000. Bill Hevlin stated the studies could be conducted for the number of weeks that was needed for a statistical balance of survival comparison between the two conditions. Discussion on comparative survival studies continued.

Rebecca Kalamasz summarized the discussion by saying that the proposal currently on the table was to start the survival studies at a flow of 50,000 (low-flow conditions) when there are forecasted flows to 70,000. Dave Hurson stated that if they did do the study at 50,000 as a low-flow condition, they should attempt to minimize the impact to the general population of fish going down the river by conducting less than 24-hour spills. Discussion continued.

Steve Rainey asked, what if the team conducted the study 2 days with RSW and training spill, releasing fish through both spillway and RSW, run a similar 2 days with spill to the cap at night releasing fish, and compare the survival in both instances at Little Goose Lock and Dam (Little Goose). Dave Hurson stated that if good tailrace conditions (under both study conditions) could occur, then all there is to observe is the physical injury going through RSW versus spill. That test could be conducted with a balloon tag test. There was discussion on the proposed 2-day study scenario.

Rebecca Kalamasz stated that they needed the survival data in order to make an RSW decision at Ice Harbor. There was discussion on the survival studies and the installation of an RSW at Ice Harbor.

Discussion on the Lower Granite RSW survival studies was tabled until after the rest of the day's agenda (see paragraph 9 for the final part of the discussion).

Marvin Shuttters stated that the next FFDRWG meeting was scheduled for April 23 and 24, 2003. He stated that Steve Pettit had pointed out that Fish Passage Advisory Committee (FPAC) and Technical Management Team (TMT) meetings were always the third week of the month. He asked if the April date would conflict with those meetings. It was determined that April 23 and 24, 2003 was still open for the next FFDRWG meeting. Bill Hevlin stated that would be a good meeting to have at one of the projects. July 23 and 24, 2003 was proposed for the following FFDRWG meeting. It

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was proposed to hold that meeting at McNary Lock and Dam (McNary). Marvin distributed the agenda (see handout 4 in the handout section).

2. Ice Harbor Turbine Repair. Martin Ahmann distributed handout 5 (see handout section). Martin stated that the consensus from the last FFDRWG meeting was that; in regards to how the Bi-Op was addressed there was not much to do on the unit two replacement at Ice Harbor. The design documents for the unit 2 replacement are complete and are currently being prepared for the biddability, constructibility, operability, and environmental (BCOE) review in March. The project will be advertised for bid to design from April 2003 to July 2003, design contract awarded in September 2003, and installation happening from May 2005 through December 2006. Martin explained the features of the new turbine (see handout for list of features). He stated that through model testing there would be no allowances made for any visible signs of cavitations within the normal operating range. The wicket gates will be sand blasted, cleaned, repainted, and re-serviced to a like new condition. Gary Fredricks asked when the modeling work was going to be conducted. Martin stated that the performance model is part of the contractor's design. The Engineering Research Development Center (ERDC) [previously known as the Corps Waterways Experiment Station (WES)] type model study is dependent upon funding from the Department of Energy (DOE). There was discussion on the turbine replacement. Martin stated the Bi-Op testing is scheduled for late summer depending on DOE funding and will be used to move toward a fish friendly design. There was continued discussion on the turbine replacement design.

3. Little Goose and Lower Monumental Emergency Auxiliary Water Supply (EAWS). Cary Rahn distributed handout 6 (see handout section). Cary stated that future physical plant construction at Little Goose is still on hold pending results of the numerical model studies. Cary stated he has received the numerical model studies for Lower Monumental. He stated the Architect-Engineer (A-E) is preparing a technical report on the acoustic simulation flow meter (ASFM) collection that will represent both raw and massaged data on how the numerical models were affected. There was discussion on some possible gate stem problems. Steve Rainey asked Cary to keep Larry Swenson informed during the numerical modeling.

4. Ice Harbor EAWS. Cary Rahn stated that since the last FFDRWG meeting the construction at Ice Harbor had begun and was proceeding as scheduled (see handout 6 in the handout section). The construction contract schedule was modified from a 4-year contract to a 2-year contract. The dewatering and demolition has been completed. Currently, two of the three pumps have been removed and the contractor is in the process of installing the first pump. The derrick crane is installed and functioning. Construction issues have been very minimal at Ice Harbor. Cary stated that he had received a final report (in the form of a technical memorandum) on the third stage of physical modeling from CH2M Hill Engineering. The report shows that there is a sump condition both in its present state and with the new pumps installed. The report indicates that the pumps are susceptible to some sub-surface vortexing. Cary summarized the problems that were indicated in the physical modeling (see handout

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6 for diagrams of the recommended sump modifications). He stated that the technical memorandum is currently under review by the Corps' Construction, Cost Engineering, and Safety offices. There was discussion on the new pumps and the condition of the old impeller blades.

Marvin Shutters stated that the Corps would have an idea of the cost and feasibility for any proposed sump repairs, or if any urgent pump repair is even necessary, by the April FFDRWG meeting. This can be discussed further in April.

5. Lower Granite EAWS. Cary stated that the contractor has notified the Corps that the switchgear vendor cannot make the promised delivery date. The alternative plan is to re-install the old switchgear in order to get the pumps back on line by March 1, 2003, and replace the switchgear one pump at a time when they do arrive.

6. Ice Harbor and Lower Granite Adult Passive Integrated Transponder Tags (PIT-tags). Cary stated that this project was one of the fast-track projects (see handout 6 and 6a in the handout section for breakdown of the project). Since the last FFDRWG meeting the Corps has started and completed the demolition phase of the Ice Harbor and Lower Granite north shore ladders. Pre-cast sections are currently being put back in at Ice Harbor. He stated that coordination for a schedule change on the south shore work has been made with National Marine Fisheries Service (NMFS) [now known as National Oceanic and Atmospheric Administration (NOAA) Fisheries] because of two conflicting contracts. Instead of having a 2-week outage on the south shore ladder, there will be a 3-week outage beginning January 27, 2003, and back into service by February 16, 2003. Cary stated that the overall weir depth was increased by 4 inches to accommodate the antennas' shield requirements. The orifice antenna on the Ice Harbor north shore ladder was raised 1 foot off the floor to accommodate the standard removable feature. There was discussion on the PIT-tag projects at Ice Harbor and Lower Granite. Several members of FFDRWG asked to have some digital pictures of the weirs taken and sent to them electronically.

7. Lower Monumental Full Flow Juvenile Bypass System (JBS) PIT-tag Detection System. Dave Hurson distributed handout 7 and 7a (see handout section). Dave stated that a group of people met at Lower Monumental on January 15, 2003, to discuss the design of a PIT-tag detection system on the 36-inch corrugated metal JBS full-flow flume. The group selected a site to install a PIT-tag detection system. Dave stated they have designed a built-in, high velocity separator system for the transport facility. Dave explained the separator and its possible location (see handout 7 in the handout section). There was discussion on the PIT-tag detection system. Marvin Shutters stated that this design will be implemented at Lower Monumental and Ice Harbor and should be completed by the spring of 2004.

8. Little Goose Fast Track Dissolved Gas Abatement Study (DGAS). Sean Milligan stated that at the last FFDRWG meeting he had mentioned that the scope of work had changed because of a funding issue. He stated that his team is currently finishing the modeling work on the end bay deflectors at WES. This fiscal year's funding will cover

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only the modeling work. He stated that developing new spill patterns to include the end bay deflectors, adding a divider wall, and looking at navigation issues are some of the items that would still need to be accomplished when funding became available. Sean stated that several people took a trip to WES in November to observe the sectional and general model of Little Goose. The primary goal was to confirm which deflector design was the best one with which to proceed. The secondary goal was to observe the flow patterns in the general model. The team observed the performance of the deflector in the sectional model. Sean stated that, based on that performance analysis, they concluded that the end bay deflectors at Little Goose would be 8-foot deflectors with no toe curve or radius transition and would be set at elevation 532b. That elevation is the same as the existing six interior bays. The end bay deflectors will look identical to the interior bay deflectors. There was discussion on the end bay deflector design and the trip to WES.

Marvin Shuttters asked if the group observed how the end bay deflectors affected the fishway. Sean Milligan stated that the group observed approximately 20 different configurations in the general model. He stated they observed the existing tailrace conditions at several different project discharge levels, spill patterns, and powerhouse operations and compared them with the added end bay deflectors, divider wall, *etc.* He stated they observed juvenile fish egress, adult fish attraction, and gas conditions. There was discussion on the testing at WES.

Sean stated that even under the existing operation conditions (on the general model) there is a lot of difference in tailrace conditions at Little Goose than at the rest of the Snake River projects. He explained the problems that Little Goose has with eddies. He stated that there is some concern for juvenile fish egress and adding the end bay deflectors does not change the eddy condition significantly. There was discussion on the eddy and juvenile fish egress problems at Little Goose.

Steve Rainey suggested that FFDRWG should recommend that adding end bay deflectors be combined with adding a divider wall at Little Goose. The cost for adding both is much higher, but adding in end bay deflectors alone would not take care of the problems at Little Goose. Discussion continued on the eddy and juvenile fish egress problems.

Steve Rainey suggested conducting a spillway survival study at Little Goose to see if the existing big eddies condition constitutes a survival problem. Gary Fredricks pointed out that conducting a spill survival study would be consistent with the Bi-Op.

Sean Milligan stated that the original scope of work encompassed conducting the model work to develop designs for the end bay deflectors, look at the potential for a divider wall, navigation affects, spilling basin affects, *etc.* At SCT last fall, most of that scope fell below the funding mark and would be cut. It was agreed to stop the study after the model work was complete. Sean stated that the sectional model work is complete and the team is progressing on the general model work. The team is presently finishing the work on the Video Tracking System (VTS) in the general model.

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They are in the middle of conducting overhead camera studies using dye and confetti. When the general model work is complete, the work on this project will cease for this fiscal year. The issue for discussion is, should we finish the model work for the end bay deflectors and stop any idea of building them until we can get further funding from SCT to conduct divider wall modeling, or do we want to try and find funding this fiscal year to continue the modeling and include the divider wall. Steve Rainey stated a third option would be to conduct a study on the juvenile fish egress issues in 2004. There was discussion on the juvenile fish egress, eddy, and DGAS issues at Little Goose.

Lynn Reese suggested that the Corps factor this discussion into the action plan and develop some suggestions to take to SCT. He stated that with the testing at Lower Granite maybe something could be done to help with the issues at Little Goose.

9. Lower Granite RSW Testing and SBC Removal. Rebecca Kalamasz stated that when the morning discussion ended, FFDRWG was discussing what flow levels would indicate a no-test condition for obtaining a comparative survival study. During some lunchtime discussions it was decided that there was some possibility of obtaining a performance evaluation at Lower Granite even during a relatively low flow.

Noah Adams stated that Lynn Reese asked him what it would take to obtain a performance number to look at RSW performance under Bi-Op spill and RSW with training spill. He stated that he had suggested developing a 3-day block and replicating that block three times (with 2 treatments that would be 6-day blocks over an 18-day period). The fish releases could be compressed to pass during that time. Performance issues could be obtained using this test period. The downside of this test period is, by spreading this study over the migration period the seasonal variations have some effect that are inherent in the out migration period. Noah explained the differences between an 18-day test period versus a 6-month test period. There was discussion on the proposed 18-day test period.

Rod Woodin asked, with the dual path strategy (6-week test versus an 18-day test), when and under what criteria would the decision to proceed one way or the other happen? Rebecca Kalamasz stated that was something that needed to be discussed and decided. Mark Lindgren stated that because of the low-flow year, the option to test would depend on forecast. There was discussion on what criteria would be necessary to conduct tests, and what equipment would need to be installed.

Noah reminded FFDRWG that under the normal test the current proposal (spillway versus RSW) for survival is to add a tailrace release group of fish. Adding the tailrace release group results in a seasonal survival estimate over all conditions for just chinook. There would be no data for RSW versus Bi-Op spill, or RSW versus low or high training spill. He stated that he would need advance notice if on April 1 the testing were to switch from conducting the full test to conducting a site-specific release test. The site-specific test will take more equipment that will need to be installed before the April 1 test date. There was discussion on the proposed testing and previous tests.

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Rebecca Kalamasz stated that it sounded like the release pipes for the site-specific test could be installed, additional releases could be added, and additional radio tags could be purchased, or the study could be devoted to using chinook only and take the steelhead radio tags and convert them to chinook. She asked if the performance of the RSW system could be obtained if the testing were conducted using only chinook. Noah Adams stated that by testing with only chinook would buy a lot of information on how the BGS is affecting the approach path. There was discussion on the size and type of fish to be used.

Rebecca Kalamasz stated that FFDRWG should work up the concept of adding the release pipes and fish and see if they can even afford to conduct these site-specific tests. Dennis Rondorf stated that he thought it was important for USGS to present a proposal so that everyone is on the same page, and the training spill versus Bi-Op questions are addressed in terms of survival. Rebecca stated that it sounds like even at a relatively low flow; survival and performance information can be obtained by modifying the initial study design and adding additional fish. The FFDRWG would have set up to conduct either test and establish a proceed point for low versus full plan to April 1, 2003. There was more discussion about the testing.

Mark Lindgren asked if any valuable information could be obtained from this research that would help make decisions on the Lower Granite RSW/BGS systems in relationship to application at Ice Harbor if the flows are below 17.5 million acre feet. Discussion continued.

Rod Woodin stated that he was relatively comfortable with the 18-day survival study, but not at all comfortable with an 18-day project performance study. He stated a Lower Granite project performance study should be a full season (April 14 through May 30) study with both species of fish. There was discussion on the full season performance study at Lower Granite.

Ann Setter stated that she had a problem with using small fish, and the survival studies should be conducted with one species from the larger size end of the species.

Rebecca Kalamasz summarized the discussions as follows:

- Conduct full study objective (feed information into the fast track at Ice Harbor and to understand the operations in 2004 for future use at Lower Granite) if there is 17.5 million-acre feet in the river on April 1.
- Conduct an 18-day study, obtaining survival (radio telemetry) using both species and performance (radio telemetry, hydro-acoustics, and 3-D) if the river is between 13 and 17.5 million-acre feet on April 1. The survival test is for the RSW and the performance test is for the BGS schedules at Ice Harbor.
- Survival study only.

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There was more discussion on the testing. Mark Lindgren stated that the whole morning was spent discussing the tests. He stated that it was time to let the researchers do their job. Noah Adams stated that he could produce a survival estimate in 4 days, but the issue will come down to what is acceptable for what that survival number means. Steve Rainey asked if USGS could develop some options with pros and cons for FFDRWG comment.

Rebecca Kalamasz asked if data from river flow of less than 13 million acre feet was needed to go forward to the designing of RSW at Ice Harbor. There was discussion on testing at less than 13 million acre-feet. There was discussion on what the data from a performance test has to look like to make the decision not to go forward with RSW design at Ice Harbor. There was more discussion on the testing in general and what information was needed.

Marvin Shutters stated that adding an update on the transition pool had been requested and asked if there were anything else that needed to be added to the agenda. Steve Rainey stated that they were supposed to discuss the action plan yesterday morning, but that it had gotten pre-empted.

10. McNary Spill Patterns. Jim Cain distributed handout 8 (see handout section). Jim stated that the handout depicted the draft proposed 2003 spill patterns for McNary. He stated that any of the lines that are dark or bold depict spill patterns that were observed at WES the previous week. He explained the different spill patterns shown on the handout. There was discussion on the spill patterns and tail water conditions at McNary. Marvin Shutters showed the results of flow patterns on a diagram. Marvin explained the tests and spill patterns that were tested at WES. There was discussion on the eddy problem at McNary. Marvin stated that they had looked at an approximate 50-foot wall between the entrance and bay 1, and that it would solve the eddy problem. He stated that his team should do a study with telemetry fish this year to make sure that there is really a problem before design or exploring the addition of a wall.

Bill Hevlin stated that Pasco NMFS is going to release 400 radio tagged fish from Priest Rapids as part of a survival study. They are releasing these fish to observe how they pass over the spillway as far as horizontal distribution. Marvin Shutters stated that the next topic for discussion was on this particular fish release. Bill Hevlin stated that there is an abundance of PIT-tag information (over the last 5 years) of all the upper Columbia, survival study, PIT-tagged fish that have gone through McNary and on down the river. The FFDRWG could obtain a good estimate of fish passage efficiency for upper Columbia fish versus Snake River fish from Skowski. There was more discussion on the proposed spill pattern schedule.

Dave Hurson asked to have the proposed spill pattern schedule be sent to him electronically so he can send it to the project.

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Rick Emmert stated that the failed hoist gearboxes are being rebuilt under warranty because they did not meet specifications. Dave Hurson stated the hoists would be tested the week of February 3, 2003.

Jim Cain stated that the Corps had interest in obtaining some lateral velocity data near the sluiceway outfall to look at the divider wall issues. This will depend on funding. There was discussion on the ways to obtain that data.

11. Research Plan 2003: Lower Monumental, Ice Harbor, and McNary. Mark Smith stated that the research plan team developed a study plan in December, presented it to FFDRWG, and are currently getting those study plans contracted. The team is adding some mid-Columbia River fish to the studies to obtain a better understanding of the difference between mid-Columbia River fish and Snake River fish at McNary. He stated that he had talked to Pasco NMFS regarding the old PIT-tag data. The data could be used to obtain survival information of mid-Columbia River fish versus Snake River fish. He stated that if spill is reduced or eliminated at Lower Monumental next year there is potential to move some of the releasing of fish to above Lower Monumental and using them for McNary.

Bill Hevlin stated that sacrificing the Lower Monumental test would make the Ice Harbor and McNary tests better. Mark Smith stated that there is still a need for survival data at Lower Monumental because of the high mortality. Gary Fredricks stated that the high mortality is a spill condition issue. If there is no spill at Lower Monumental next year, then there will not be a mortality problem. There was discussion on spilling and survival at Lower Monumental.

Mark Smith stated that he wanted to pursue a powerhouse survival study at Lower Monumental using fewer fish. He stated that there should not be a need for an additional 1,600 fish at McNary. He suggested adding 500 to 600 additional fish to meet the objectives. There was discussion on what testing is required for Lower Monumental in the Bi-Op and the proposed action plans for Lower Monumental, Ice Harbor, and McNary.

Bill Hevlin stated that he was strongly opposed to conducting a powerhouse survival study at Lower Monumental. He stated that there is a problem at Ice Harbor and possibly a problem at McNary. The study effort should be placed at those projects where there will be spill. The study effort at Lower Monumental should wait until it is back to normal operation. Rod Woodin stated that it was inappropriate to release fish into the Lower Monumental forebay if the project is not operating under the in-river passage conditions. There was discussion on the study efforts of the three projects.

Ann Setter agreed with Bill Hevlin and Rod Woodin. She stated that unless the study effort at Lower Monumental went back to its original intent it should be deferred, and numbers of fish at the other projects should be beefed up. Bill Hevlin stated that the transport evaluation could still be conducted at Lower Monumental. There was more discussion on the study effort for the three projects.

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Mark Smith stated that there have been no changes made to the proposed studies at Ice Harbor and McNary.

Marvin Shutters suggested that all the people that are planning to go to WES in February to observe the Ice Harbor model should schedule a follow-up meeting or conduct a conference call type-meeting with the Study Review Work Group (SRWG) or FFDRWG to discuss exactly what conditions need to be studied and how to study it. There was discussion on the upcoming trip to WES.

Martin Ahmann stated that the trip to WES is the second week of February. Martin stated he would like to take the first day and demonstrate the existing operations at Ice Harbor and evaluate the low-, medium-, and high-flow operation given in the current fish passage plan. He stated the model needed to be observed with the idea of what research results are required. He stated he would like to evaluate the three flow conditions with respect to what was observed in 2000 and 2002. Another key item that should be done is to demonstrate the range of possibilities with the model. He stated he wanted to demonstrate the differences in the stilling basin action in the general model. He stated he would also like to take the opportunity to observe one of the sectional models. Finally, the objective is to define the criteria for the 2003 field studies. There was discussion on the upcoming trip to WES and the Ice Harbor operations and survival rates.

Marvin Shutters stated that there would not be a project wide hydro-acoustics study at McNary this year. There might be some hydro-acoustic studies conducted with the Fish Guidance Efficiency (FGE) system. The telemetry study will be very thorough on spring migrant fish, spring chinook, project survival, spill survival, FGE, and spill efficiency. Gary Fredricks stated that these studies would not produce route specific information. Marvin stated that with the additional telemetry fish from Lower Monumental, more route specific information could be obtained. Dave Hurson stated that this year there would be a transport study conducted on mid-Columbia River fish. The switch gate will be thrown every other day to collect fish for 24 hours. All the fish that are not mid-Columbia River PIT-tag fish will be bypassed back to the river. The mid-Columbia River PIT-tag fish will be diverted to the raceways. This will provide evaluation information of the full flow towards the bypass pipe. There was discussion on the specific route information and specific studies that are needed for McNary. The FFDRWG decided to have some kind (conference call, face to face, etc.) of meeting on February 25, 2003.

12. Lower Monumental Spillway Repair and Deflector Construction. Dan Katz distributed handout 9 (did not receive). Dan Katz stated that concrete is still being poured in the spilling basin at Lower Monumental. Dan stated that the holes in the spilling basin that were filled last fall are curing and expected to be up to full strength by the time voluntary spill season begins. Concrete will be poured into the spot where the cofferdam used to be. Dan was asked if anyone had gotten permission to pour concrete in the cofferdam spot. Dan stated he would have Ben Tice, the environmental coordinator for this project, come and let everyone know what was done. Dan stated

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that construction on the deflectors was progressing slowly. He stated that Steve Tatro reports that the deflectors will be up to full strength sometime in April. If there is voluntary spill or any other kind of spill in April, the project might have to spill through the center bays or have Steve Tatro make sure that the deflectors have completely cured. Dan stated that a conservative estimate for complete curing is May 1, 2003. There was discussion on the curing of the deflectors and the spill schedule.

Dave Hurson asked when bay 8 was scheduled to be poured. Dan Katz stated that the contractor is a little behind schedule, and bay 8 could be poured sometime in March. Dave Hurson stated that the contract ending date is February 15, 2003. Rick Emmert stated that the contractor would have to be granted an extension.

Steve Rainey asked what steps are being taken to minimize the degree of overage in time beyond the contract. Rick Emmert stated that the contractor has been pushing to complete this project. He stated that the contractor would have to pay liquidated damages for not completing the project within the agreed upon timeframe. Scott Bettin stated that there are two decisions that need to be made. The NMFS would have to decide whether the period can be extended or not and whether to add curing additives and plan on delayed spill. Dan Katz stated that the contractor is approximately 5 weeks behind schedule, but could possibly make some changes and accelerate to 3 weeks behind schedule. There was discussion on the contractor schedule. Rod Woodin stated that there would be an adult fish passage issue in early March if this construction goes into additional in-water work. Rick Emmert stated that he would talk to Construction Division, determine the actual pouring schedule, and send the schedule to all the agencies via electronic mail (e-mail). Discussion continued.

Ben Tice from the Environmental Compliance Section stated that additional compliance was not completed for the end sill repairs. It was determined that the effects from that additional piece of work would be less if it were completed now than if it were done at a later date (possibly next year). He stated that the effects from the stilling basin repair were so minor that proceeding with the end sill repair (much smaller project) would not have any significant impacts. Dave Hurson asked if the water quality certification would allow that (because of dates in the certification). Ben Tice stated that the additional repair was covered as long as it is completed before March 1, 2003.

Rod Woodin asked if the water quality certification would extend for the additional time needed to finish the deflector construction. Rick Emmert stated that he suspected that the construction would be complete before March 1, 2003, and all that will be needed is curing time. He stated that he would check on the construction schedule to make certain that was the case.

Bill Hevlin asked if, during the pouring of the concrete, many fish were observed. Ben Tice stated that during the first pour there were very few fish observed. Ben stated that a bubble curtain was used during the pouring of the concrete. There was discussion on the effects of the bubble curtain.

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a. Lower Monumental Spill Plan. Dan Katz stated that in the draft Fish Passage Plan there are three elements to project operations at Lower Monumental (see handout 10 in the handout section). Those elements are: spill patterns, spillway powerhouse (could not hear), and powerhouse (could not hear) priority. He stated that those three elements are somewhat covered on pages 6 and 20 of the draft Fish Passage Plan. Dan stated that the flattest possible spill pattern would produce the best tailrace conditions. He explained his team's findings of the different spill pattern tests conducted on the model. There was discussion on the proposed spill schedule for the upcoming year's operation and the gas levels that could be created by the proposed spill patterns. Steve Rainey stated that it was important to emphasize that whenever there were just one or two units on, during spill, there was still real poor lower level velocities or stagnant conditions at the bypass outfall. He stated that it really took three units operating to get up to (could not hear). Discussion continued on spill patterns and gas levels.

b. Lower Monumental Phase II. Dan Katz stated that his team looked at extending the divider wall. The team found some limited benefits. The divider wall would influence the unit closest to the spillway. Dan stated that it would cost less to construct a divider wall at Lower Monumental, but would also produce a lower benefit. He stated that the team was going to observe the effects of a divider wall more on the model. Steve Rainey stated that juvenile fish egress is still possible at Lower Monumental without a divider wall. Bill Hevlin stated that there was approximately 10 times more flow between the powerhouse and underneath the spillway at Little Goose than there was at Lower Monumental. Because of that, the divider wall did not seem to do much at Lower Monumental. Dan Katz stated that under Phase II the team would observe the divider more in the model to quantify what the benefits really would be and then make some rational decisions.

13. High-Velocity Separator. Dan Katz stated that there were approximately 30 copies of the Juvenile Fish Separator evaluation technical report printed and disbursed. He stated that the technical report was a summary of research that laid out some design criteria and made some recommendations both as far as what would be smart in terms of actually implementing this high-velocity separator at existing facilities and possibly at Lower Granite. The second thing that was covered in the recommendations was testing in 2003. There is funding available for testing the high velocity separator. Dan explained what tests his team wanted to conduct. Bill Hevlin stated that he was asked to write a coordination memo supporting the change of where Mike Gessel and company would be obtaining the fish for the high-velocity separator study. The permit in the Bi-Op states that fish can be obtained from McNary or Ice Harbor. It was recommended that fish be obtained from the gatewells at Lower Granite. The coordination memo will eliminate the need for a modified section 10 permit. There was discussion on Lower Granite gatewell fish.

14. Summary on RSW Survival Test Plan. Rebecca Kalamasz distributed a handout that depicted a summary of recommendations that were agreed to for the survival test plan. Rebecca summarized the recommendations. Rebecca stated that it had been

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recommended changing the first trigger date from April 1 to March 7. There was discussion on the recommendations for RSW/BGS testing at Lower Granite and Ice Harbor RSW development and other changes recommended. Rebecca stated that she would make the changes and redistribute the handout (see handout 11 in the handout section for final recommendations).

15. Lower Monumental Juvenile Fish Facility (JFF) Improvements. Dan Katz distributed handout 12 (see handout section). Dan stated that the JFF improvements entail the realignment of the barge-loading flume at Lower Monumental. He stated that the contract for this realignment project has been awarded, and construction is set to begin this spring. There was discussion on the pipe specifications. Dan stated the new flume would be over three times as long as the old flume, and exit velocity would be approximately 10 feet per second (fps). Dan explained the velocity changes through the new flume. Bill Hevlin asked if there should be a site visit when transporting begins. Dave Hurson stated that transport would begin on April 8. Dan Katz stated he would like to be on site before the flex hose is connected. It was decided to plan a site visit when the flex hoses are going to be connected. There was discussion on the dryers in the JFF.

16. The SBC Removal. Kevin Crum stated that with everything up in the air with SBC removal and the RSW testing, the Corps has a schedule concern. If there would be a change in the schedule for removing the SBC, the best time to do the removal would be at the same time as the transformer work at Lower Granite (August). In August, half the powerhouse would be shut down and that would be a perfect alternate time to conduct the SBC removal. There was discussion on when the powerhouse would be shut down for the transformer work. Kevin asked if the SBC could be removed during the first part of the transformer work (July through end of August). There was discussion on the logistics of the SBC removal.

17. McNary Modernization. Kevin Crum distributed handout 13 (see handout section). Kevin stated that the schedule has not changed. The project is still in the milestone of working with the four model test contractors. The four contractors are working independently to obtain designs that fit the parameters. It has been reported that all four contractors have completed their designs and are conducting modeling tests at their individual facilities. The independent lab tests are scheduled for a May to October timeframe, but could slip by 1 month. There was discussion on the vertical barrier screens (VBS) testing.

Mark Smith stated that there would be an FGE study on three units at McNary this year. He stated that the study would use radio-tagged fish that are being set up for the Ice Harbor, Lower Monumental, and McNary survival studies. The FGE studies would be conducted using hydro-acoustic. There was discussion on the FGE studies. Mark stated that this year's FGE studies would be conducted to use as a comparison to the prototype. There was continued discussion on the FGE studies.

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Martin Ahmann stated that the new VBS would use the same mesh with a tighter grid. He stated that if the traveling screens function the way they are expected to, a large portion of the debris problem would be eliminated from the gatewell. There was discussion on the VBS testing.

Gary Fredricks asked if the Corps responded to the letter from NMFS on the Bi-Op for (could not understand). Kevin Crum stated that the Corps responded in August 2002.

Discussion went back to the VBS testing. Marvin Shutters stated that the Corps would know if there was any trouble with the traveling screens by September or October. That would leave 3 to 4 months before the March decision date. It was decided that Marks Smith and Gary Fredricks would coordinate any changes in operation needed for testing the VBS at McNary.

18. Transition Pool Modifications. Marvin Shutters stated that the 2 years of experimental design, where the conditions were changed after every 20th radio telemetry fish, is complete. There are no final reports yet (2nd year of the test just ended in November). The analysis on the 2-year field test is the only activity in the scope of work for this year. He stated that next fiscal year will be for brainstorming alternatives and developing a design to make a permanent operational system that uses the principles applied to move fish through the transition pool quicker and decrease the number of fish returning back down or falling out. There was discussion on the transition pool study. Marvin stated that the report of the experimental tests should be ready for distribution in late summer.

19. Action Plan. Rebecca Kalamasz stated that the team met on December 11, 2002, and identified potential actions at the different projects. She stated that the team plans to summarize those potential actions and get them distributed before the trip to WES. The teams plans to meet again, talk through the ideas, and identify configurations for the system. There was discussion on the action plan. Bill Hevlin stated that in-river performance standards for spring Snake River fish is pretty clear cut. There was discussion on performance standards. A meeting was set for February 21, 2003, to discuss performance standards. Rebecca stated that there needed to be a meeting to discuss the Reasonable and Prudent Action (RPA) (which one?).